



Most Technology Service Co., Ltd.  
Tel: (86) 755-26825180 Fax: (86) 755-86170310  
Http:// www. szmost.com Email: szmost@szmost.com

## **Test Report**

Product Name: GPS PORTABLE NAVIGATION DEVICE

FCC ID: VUP-PA01-3501

MODEL NO. : PA01-3501, PA01-3502, PA-3503, PA-3504, PA-3505

Applicant:

YF INTERNATIONAL LIMITED

7TH FL., CHINA ACADEMY OF SCIENCE&TECHNOLOGY DEV.,  
HIGH TECH SOUTH STREET 1, CHINA

**Date Received: 04/28/2009**

**Date Tested: 04/27/2008**

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Cover Sheet



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## **TABLE OF CONTENTS**

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### **TEST REPORT CONTAINING:**

PAGE 1.....TEST EQUIPMENT LIST  
PAGE 2.....TEST PROCEDURE  
PAGE 3-4.....POWER LINE CONDUCTED INTERFERENCE AND PLOTS  
PAGE 5-6.....RADIATION INTERFERENCE TEST DATA

### **EXHIBIT INCLUDED:**

PAGE 1.....BLOCK DIAGRAM  
PAGE 2.....SCHEMATIC  
PAGE 3.....USERS MANUAL  
PAGE 4.....LABEL SAMPLE  
PAGE 5.....LABEL LOCATION  
PAGE 6.....EXTERNAL PHOTOGRAPHS  
PAGE 7.....INTERNAL PHOTOGRAPHS  
PAGE 8.....OPERATIONAL DESCRIPTION  
PAGE 9.....TEST SET UP PHOTOGRAPHS

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TABLE OF CONTENTS



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## EMC Equipment List

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	100492	Mar 10,2009	1 Year
LISN	ROHDE&SCHWARZ	ENV216	100093	Mar 10,2009	1Year
EMI Test Receiver	ROHDE&SCHWARZ	ESCI	101202	Mar 10,2009	1 Year
Spectrum Analyzer	ANRITSU	MS2651B	6200238316	Mar 10,2009	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10,2009	1 Year
Bilog Antenna	Sunol	JB3	A121206	Mar 10,2009	1 Year
Horn Antenna	EMCO	3115	640201028-06	Mar 10,2009	1 Year
50 Coaxial Switch	ANRITSU CORP	MP59B	6200283933	Mar 10,2009	1 Year
Cable	Resenberger	N/A	NO.1	Mar 10,2009	1 Year
Cable	SCHWARZBECK	N/A	NO.2	Mar 10,2009	1 Year
Cable	SCHWARZBECK	N/A	NO.3	Mar 10,2009	1 Year
Single Phase Power Line Filter	Kikusui	LIN40MA-PC R-L	LM002352	Mar 10,2009	1Year
AC Power Source	Kikusui	AC40MA	LM003232	Mar 10,2009	1Year
Test analyzer	Kikusui	KHA1000	LM003720	Mar 10,2009	1Year
ESD Tester	Kikusui	KES4021	LM003537	Mar 10,2009	1 Year
Signal Generator	IFR	2032	203002/100	Mar 10,2009	1 Year
Amplifier	A&R	150W1000	301584	NCR	NCR
Dual Directional Coupler	A&R	DC6080	301508	Mar 10,2009	1 Year
Power Head	A&R	PH2000	301193	Mar 10,2009	1 Year
Power Meter	A&R	PM2002	302799	Mar 10,2009	1 Year
Field Monitor	A&R	FM5004	300329	Mar 10,2009	1 Year
Field Probe	A&R	FP5000	300221	Mar 10,2009	1 Year
EMC PRO System	EM Test	UCS-500-M4	V0648102026	Mar 10,2009	1 Year
EMC PRO System	EM Test	UCS-500-M4	V0648102026	Mar 10,2009	1 Year

Remark:

Test Firm Name: Most Technology Service Co., Ltd.

Test Firm Address:

No. 5, 2nd Langshan Road, North District, Hi-tech Industrial Park, Nanshan, Shenzhen, Guangdong, China

FCC Registered Test Site Number: 490827

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## TEST PROCEDURE

**GENERAL:** This report shall NOT be reproduced except in full without the written approval of MOST TECHNOLOGY SERVICE CO., LTD. The EUT was transmitting a test signal during the testing.

**POWER LINE CONDUCTED INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a 50 UH LISN. Both Lines were observed. The bandwidth of the receiver was 10kHz with an appropriate sweep speed. The ambient temperature of the EUT was 25 with a humidity of 58%.

**RADIATION INTERFERENCE:** The test procedure used was ANSI Standard C63.4-2003 using a ANRITSU spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a micro volt at the output of the antenna. The resolution bandwidth was 100 kHz and the video bandwidth was 300 kHz up to 1 GHz and 1 MHz with a video BW of 3 MHz above 1 GHz. The ambient temperature of the EUT was 25 with a humidity of 58%.

**FORMULA OF CONVERSION FACTORS:** The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer and cable loss. The antenna correction factors and cable loss are stated in terms of dB. The gain of the Pre-selector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF + CABLE = FS  
33                      20 dBuV + 10.36 dB + 0.9 dB= 31.26 dBuV/m @ 3m

**ANSI STANDARD C63.4-2003 10.1.7 MEASUREMENT PROCEDURES:** The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation. The spectrum was scanned from 30 MHz to 10th harmonic of the fundamental.

Peak readings were taken in three (3) orthogonal planes and the highest readings were converted to average readings based on the duration of "ON" time.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

The situation was similar for the conducted measurement except that the table did not rotate. The EUT was setup as described in ANSI Standard C63.4-2003 10.1.7 with the EUT 40 cm from the vertical ground wall.



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**APPLICANT:** YF INTERNATIONAL LIMITED  
**FCC ID:** VUP-PA01-3501  
**NAME OF TEST:** POWER LINE CONDUCTED INTERFERENCE  
**RULES PART NUMBER:** 15.107

**REQUIREMENTS:**

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

**TEST PROCEDURE:** ANSI STANDARD C63.4-2003

Test Mode: GPS Playing

Frequency (MHz)	Line Under Test	Emission Level (dBuV/m)		FCC 15 Subpart B Limit (dBuV/m)Avg	FCC 15 Subpart B Limit (dBuV/m)QP
		Avg	QP		
0.730	L	33.79	48.48	46.00	56.00
4.174	L	33.87	48.77	46.00	56.00
4.246	L	33.45	47.45	46.00	56.00
0.170	N	45.92	53.22	52.39	62.39
0.214	N	43.40	58.34	53.05	63.05
4.000	N	38.30	52.00	46.00	56.00

Note: If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary

Test Mode: Data Transmitting

Frequency (MHz)	Line Under Test	Emission Level (dBuV/m)		FCC 15 Subpart B Limit (dBuV/m)Avg	FCC 15 Subpart B Limit (dBuV/m)QP
		Avg	QP		
0.194	L	--	49.20	53.86	63.86
0.342	L	--	43.19	49.15	59.15
0.842	L	--	38.82	46.00	56.00
0.318	N	--	45.47	49.76	59.76
0.786	N	--	40.24	46.00	56.00
1.034	N	--	38.04	46.00	56.00

Note: If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary



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**REQUIREMENTS:**

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

\* Decreases with the logarithm of the frequency.

**TEST PROCEDURE:** ANSI STANDARD C63.4-2003

Test Mode: Charging

Frequency (MHz)	Line Under Test	Emission Level (dBuV/m)		FCC 15 Subpart B Limit (dBuV/m)Avg	FCC 15 Subpart B Limit (dBuV/m)QP
		Avg	QP		
0.478	L	43.15	51.29	53.21	63.21
0.546	L	38.09	51.66	46.00	56.00
0.670	L	38.33	48.35	46.00	56.00
0.170	N	45.92	53.22	54.96	64.96
0.214	N	43.40	58.34	53.05	63.05
4.000	N	38.00	52.00	46.00	56.00

Note: If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with average detector is unnecessary



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**FCC ID:** VUP-PA01-3501

**NAME OF TEST:** RADIATION INTERFERENCE

**RULES PART NUMBER:** 15.109

**REQUIREMENTS:**

S15.109  
30 - 88 MHz 40 dBuV/m @3M  
88 - 216 MHz 43.5  
216 - 960 MHz 46  
ABOVE 960 MHz 54dBuV/m

Test Data:

**REMARK:** Emissions attenuated more than 20 dB below the permissible value are not reported.

Test Mode: Charging

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart B Limit (dBuV/m)
		Avg	QP	Peak	
86.26	Horizontal	--	29.44	--	40.0
149.67	Horizontal	--	36.53	--	43.5
204.60	Horizontal	--	31.28	--	43.5
870.02	Horizontal	--	32.14	--	46.0
30.00	Vertical	--	30.17	--	40.0
86.26	Vertical	--	26.09	--	40.0
144.46	Vertical	--	29.05	--	43.5
908.82	Vertical	--	38.15	--	46.0

Test Mode: GPS Playing

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart B Limit (dBuV/m)
		Avg	QP	Peak	
30.00	Horizontal	--	26.94	--	40.0
140.58	Horizontal	--	29.96	--	43.5
150.28	Horizontal	--	27.92	--	43.5
443.22	Horizontal	--	30.91	--	46.0
30.00	Vertical	--	35.40	--	40.0
43.58	Vertical	--	32.93	--	40.0
140.58	Vertical	--	23.88	--	43.5
699.30	Vertical	--	30.87	--	46.0

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**REQUIREMENTS:**

S15.109  
30 - 88 MHz 40 dBuV/m @3M  
88 - 216 MHz 43.5  
216 - 960 MHz 46  
ABOVE 960 MHz 54dBuV/m

Test Data:

**REMARK:** Emissions attenuated more than 20 dB below the permissible value are not reported.

Test Mode: Data Transmitting

Frequency (MHz)	Antenna Polarization	Emission Level (dBuV/m)			FCC 15 Subpart B Limit (dBuV/m)
		Avg	QP	Peak	
55.22	Horizontal	--	31.01	--	46.0
165.80	Horizontal	--	27.39	--	46.0
480.08	Horizontal	--	39.25	--	46.0
926.28	Horizontal	--	37.56	--	54.0
55.80	Vertical	--	34.72	--	40.0
167.74	Vertical	--	29.86	--	43.5
480.08	Vertical	--	35.31	--	46.0
930.16	Vertical	--	34.47	--	46.0